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which leads to a wearing out of the tissues. Thus the so-called amitosis is not concerned with cell-increase but leads to increase in surface area of the nucleus, the center of cell-activity.

The origin of the adipose tissue of the adult fly.— In most insects the larval adipose tissue persists in the imago, presenting at most slight modifications. In the higher Diptera, however, and especially in the Muscidae, it has been found that the larval fat-tissue disappears completely and is replaced in the adult by a new tissue. This Berlese thought to be derived from the nuclei of larval muscles, while Henneguy regarded it as made up of metamorphosed leucocytes.

Perez,¹ '07, describes a condition much more in harmony with what is known concerning the origin of other adult organs and tissues. According to this investigator the fatty tissue of the adult originates from subhypodermal groups of small, compact, mesenchymatous cells which, like all young cells, stain readily in haematoxylin. These groups are thus the homologues of the imaginal disks.

The influence of nutrition on reproduction in a spider.— Lecaillon,¹ '07, finds that the conditions of nutrition strikingly influence egg production in a common spider, *Agelena labyrinthica*. Ordinarily this species constructs a single cocoon, containing from 50–100 eggs. Occasionally double cocoons are to be found, one capsule containing a much smaller number of eggs. By overfeeding, Lecaillon obtained from one female five cocoons in as many weeks. Four of these contained respectively 78, 38, 14, and 5 eggs while the fifth cocoon was small, irregular and empty.

W. A. RILEY.

Notes.— The so-called double heart of the mollusk *Arca* has been made the subject of special investigation by A. Theiler (*Jena. Zeitschr. f. Naturwiss.*, Bd. 42, pp. 115–142, Taf. 9–10). The author points out that it is only proper to speak of a double heart where each ventricle has a separate aorta and acts independently of its fellow. Such a condition occurs in *Arca noae*, *A. barbata*, *A. tetragona*, and *A. lactea*. In *A. lactea*, however, there is a common pericardium for both ventricles.

¹ Perez, Ch. Origine du tissu adipeux imaginal chez les Muscides. C. R. Soc. Biol. 1907, lxiii, pp. 137–139.

¹ Lecaillon, A. Influence de la nutrition sur la reproduction d'*Agelena labyrinthica* Cl. C. R. Soc. Biol. 1907, lxii, pp. 334–337.

and in *A. scapha*, according to Ménégaux, there is not only a common pericardium but the two ventricles are represented by one. Thus in different species of *Arca* there occurs all transitions from a single to a double heart.

After an extended consideration of the musculature of the gorilla in comparison with that of man and the lower apes, Dr. A. Sommer (*Jena. Zeitschr. f. Naturwiss.*, Bd. 42, pp. 181-308, Taf. 25-28, 1906) concludes, contrary to the opinion of Huxley, that the gorilla in this part of its structure is more closely related to the lower apes than to man.

P.

Two large frogs from South Kamerun, West Africa.—The University Museum, University of Michigan, has recently received, in a very interesting collection made by Mr. George Schwab from the vicinity of Efulen, Kribi, Kamerun, West Africa, a specimen each of the Giant Frog, *Rana goliath* Boulenger, and the Hairy Frog, *Trichobatrachus robustus* Boulenger. Both of these specimens agree closely with the descriptions recently published by Mr. Boulenger (*T. robustus* Proc. Zool. Soc. Lond., May 8, 1900, 443; *R. goliath*, Ann. & Mag. of Nat. Hist., XVII, 317-318, and Proc. Zool. Soc. Lond., I, 179). *R. goliath* enjoys the distinction of being the largest frog known, and the above mentioned specimen only slightly exceeds in size the one described by Mr. Boulenger. From snout to vent it measures 300 mm., but Mr. Schwab, the collector, states that *it is only partly grown*. He writes of its habits as follows: "This frog lives only in rivers, about the rocky shores of deep pools. On the slightest provocation it dives away, making it difficult to secure specimens."

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